



# **EVALUATION REPORT OF A POTABLE WATER PROJECT IN LUWERO DISTRICT**

**June 2001**

**Carl Bro International a/s**  
Intelligent Solutions



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## **Acronyms**

DWD	Directorate of Water Development
HPM	Hand Pump Mechanic
L/h	Litres per hour
L/p/d	Litres per person per day
Km	Kilometre
MoH	Ministry of Health
SPD	Spare Parts dealer
TOT	Trainer of Trainers
WUG	Water User Group
WUC	Water User Committee
PRA	Participatory Rural Appraisal
O&M	Operation and Maintenance

## ***EXECUTIVE SUMMARY:***

This evaluation study was commissioned by PLAN international Uganda of the PLAN and was carried out by Carl Bro International from 16th May to 15th June 2001. The objective of the project was to provide the rural population of Luwero with easy access to potable water within 500 meters from their homes. The goal was to drill 50 boreholes and install handpumps over a three-year period from 1999 – 2001. Altogether 3865 families in 19 parishes were expected to benefit from the project. The Project involved local communities and various levels of local authorities at all stages of planning, implementation and monitoring.

The purpose of the evaluation was to:

1. To assess the degree of accomplishment of the stated objectives.
2. To review the project implementation and especially the extent to which the activities as specified in the original agreement have been implemented.
3. To identify general areas and important strategies and modalities where further action is required and if necessary recommend appropriate actions to be taken.
4. To assess the mode and effect of collaboration with local authorities

Information was collected for this evaluation study in a number of different ways, in order to canvas as wide a field of sources as possible, and to balance quantitative with qualitative information. Such a balance not only provides “richer” information, but also is an important source of verification of data. Information gathering methodologies included a District workshop, household socio-economic survey, and interviews with key informants (water users committee members, PLAN staff, hand pump mechanics etc.), Participatory Rural Appraisal meetings in parishes and water all installed water sources were visited and inspected

39 boreholes have been drilled by the time of the evaluation and the remaining 11 boreholes are to be drilled in the second half of 2001. 36 out of the 39 boreholes drilled have been installed - the other three are low yielding and awaiting hydrofracturing so as to increase the yield.

In total the boreholes are serving approximately 2,783 families, which is 72% of target. Average per capita consumption is 14 litres per person per day, which is below the Ministry of Health recommended consumption of 20 litres per person per day.

All the 36 installed sources are functioning properly with only seven of them having ever broken down; repairs were carried out by subcounty-based handpump mechanics. It is important to note that all these boreholes are less than two years old and as they "age" more frequent breakdowns may be experienced. PLAN has however put in place an institutional framework for O&M comprising of Water User Committees who are overall responsible for O&M including collection of O&M funds. Hand Pump Mechanics carry out the repairs and there is a spare parts dealer based in Luwero town, users can therefore get access to spares when need arises. Every source has a caretaker who is responsible the hygienic maintenance of the source and is supposed to report any technical fault to the committee.

Project approach is to have all the WUCs trained by the Community based trained trainers (TOTs) who were trained through the project. All the TOTs were trained, however only 61% of

the WUCs were found to have been trained. The TOTs were also supposed to have carried out community trainings but out of the sampled communities none reported that they had received the training/visits from the TOTs. The TOTs have also not been facilitated and no support follow up by PLAN staff was reported carried out.

To a great extent the intended distance reduction was achieved with 75% of the users collecting water within the targeted 500metres this leaves out 25% who are travelling beyond this targeted distance. Though time is reported saved in comparison to the situation before provision of boreholes, 44% spend more than 30 minutes on water collection - this is because of the long queues at the source.

More than 90% of the people-using PLAN provided sources are satisfied with both the yield and quality. The satisfaction is further expressed through acknowledgement of benefits from PLAN, which include improved health through use of clean safe water.

The project has promoted equal access and management by men, women girl, children and boy children. 33% of the members of Water Users Committees are female which is in line with the National gender Policy.

The users are fully responsible for operation and maintenance but lack full confidence in themselves and still think that some of the major decisions like re-election of committees should be done by others outside their communities like PLAN.

Findings indicated a high level of knowledge on hygiene behaviours but the practice was found to be poor with 55% not observing the safe water chain, i.e. with dirty water collection and storage containers, while in 59% the homestead environments were dirty. Discussions with PLAN official revealed that the problem of slow response in behaviour change has been recognised as one of the major challenges for the programme. To this effect Community-based Resource Persons (CORPS) have been recruited (one per parish) and their role is to sensitise communities on all health related aspects e.g. sanitation and hygiene, immunisation, nutrition, AIDS etc.

To address the problem of hygiene in schools, PLAN is producing a hygiene promotion booklet focusing mainly on school children. The booklets will be distributed to all PLAN supported schools.

Overall the project was well implemented (initial mobilisation and training of communities, and siting and construction of boreholes) but there was no mechanism put in place for follow up after main project implementation.

### **Summary of recommendations:**

There is need to provide more boreholes to increase accessibility of water to the users and reduce crowding around the boreholes which will lead to reduction in time for water collection and contribute to usage of larger quantities of water.

Although all the boreholes installed are functioning very well there is need to institute a monitoring system to ensure the O&M system continues functioning and be strengthened where weaknesses are detected by the monitoring system. It should be noted that these boreholes are new, there is need to be proactive, lessons could also be obtained from the old boreholes in the same subcounties/parishes.

The efforts by PLAN to promote health improvements through CORPS and schools are highly appreciated and the review consultant recommends that continued sensitisation is paramount, however, since knowledge on health effects seems high but practice is low other marketing strategies should be used. Hygiene promotion should be modified with emphasis being put on behaviour change other than information dissemination. Use of social marketing techniques is recommended. The benefits of improved hygiene behaviours and the relationship between the benefits, the diseases, the family incomes and expenditures i.e. "Improved sanitation is wealth" should be promoted. Furthermore, both the CORPs and TOTs should be helped to plan together so as to maximise services to the community and avoid duplication of efforts.

As part of post construction activities PLAN should put in place a monitoring system, which will ensure continued information flow regarding the status of these sources as well as behaviour related to use and management of the water supplies and follow up actions to be taken.

There is need to design a mechanism for monitoring and support follow up and also form new committees for every source based on actual users as these will have commitment to the sources. During the follow-ups emphasis should also be put on empowering communities to take decisions and effect change where necessary. At the moment they fear to take administrative related decisions e.g. enforcement of opening times for the borehole, change of non-performing caretakers and committee members, they say such decisions can only come from above i.e. for PLAN Officials.

## **1 INTRODUCTION:**

### **1.1 Background:**

Plan is implementing a water Project in Luwero district under NORAD funding. The Project was budgeted at NOK 4.1 Million, which is approximately USD 476,700 and was originally designed to run for three years (1999-2001). Actual implementation commenced in 1999 and the project has been running for three years. The objective of the Project was to provide potable water to 3865 families within a distance of 500 metres. The population to be served was approximately 21,258 people. The Project area covers the sub counties of Kikyusa, Luwero, Katikamu, Bamunanika, Kalagala, Nyimbwa, Ziobwe and Bombo Town Council, comprising of 24 parishes and 39 Villages. At the time of the review a total of 39 boreholes had been drilled and 36 of these had been installed (the three not installed because of low yields are to be hydrofractured<sup>1</sup> to increase their yields).

Implementation strategy was that beneficiaries participate in all stages of the Project cycle i.e. planning, implementation/construction, operation and maintenance. In addition, both men and women were to equally participate in the decision-making process hence the inclusion of gender promotion as part of project activities.

Community capacity building and empowerment was also a major component of the Project, this is because experience in implementation of water and sanitation Projects has shown that for maximisation of benefits to the community, facilities put in place and hygiene behaviours advocated for should be sustained. Furthermore it has been established that for sustainability to be achieved, users need to be empowered to take charge of the operation and maintenance process especially those activities within their ability e.g. hygienic maintenance of sources, funds for minor O&M activities including repairs and servicing.

#### **1.1.1 The Evaluation Process**

An evaluation of the NORAD funded Project was instituted by PLAN in May 2001 and carried out by Carl Bro International. The Study was to last one month running from 16<sup>th</sup> May - 15<sup>th</sup> June 2001 and covering all the sub counties of the project area.

The evaluation covered four major areas (as specified in the Terms of Reference) and these are:

- An assessment of the degree of accomplishment of the Project objective.
- A review of Project implementation with emphasis on the extent to which the activities have been implemented.
- Identification of general areas and important strategies and modalities where further action is required and where necessary, recommendations on appropriate action to be taken.
- Role and effect of collaboration with local authorities.

In particular the review answers the following questions:

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<sup>1</sup> Hydrofracturing is a technique in which hydraulic pressure is applied in an isolated zone of the borehole to clean sediments from fractures through which water enters the boreholes and/or initiate new fractures.



**Effective Use:** Whether communities are using the water as intended and if it is hygienically handled from source to mouth (an assessment of the safe water chain and the percentage of the community benefiting from the provided water sources).

**Sustainability:** The extent to which Project activities are sustainable, looking at the technical operation of the boreholes, the organisational and institutional arrangements put in place.

**Replicability:** An assessment of other organisations/Projects (including government), which are providing the same services as well as PLAN's proposed future interventions.

## **1.2 Sample Selection and Methodology:**

### **Sample Selection**

According to information provided by PLAN, the original target was to provide 50 bore holes to 3865 households, however at the time of implementation, only 37 sources were reported drilled – thus serving 2860 families which is 74% of original target. The remaining 13 boreholes are to be drilled during the second half of the year 2001.

For social investigations, a sample of 13% of the 2,860 families served was selected using purposive stratified random sampling where the seven sub counties with NORAD funded PLAN boreholes were selected. The number of parishes covered in each sub county varied dependent on the number of sources provided. In Kikyusa which had the highest number of sources, a total of three parishes were covered while in each of the sub counties of Bamunanika, Kalagala, Zirobwe, Nyimbwa and Luwero the study covered two parishes, Katikamu had one parish selected - in total 14 parishes were covered. At the parish level, with exception of Kiyanda which had two villages all the rest had one village selected thus making a total of 15 villages and in each village 25 households were chosen - altogether the sample comprised of 375 households. See Annex 3 for the list of selected sample areas.

With regard to technical evaluation and hygienic maintenance of the boreholes as well as existence and activities of Water User Committees, all the 36 installed sources (100%) were covered. See Annex 2 for the location of provided boreholes.

### **Methodology:**

The consultant submitted a review proposal to PLAN in response to the proposal request and the review exercise commenced after proposal approval - activities covered included:

- Preparation of data collection instruments
- Recruitment and training of enumerators
- Pre-test of survey instruments
- Field data collection
- Data entry and analysis
- Preparation of draft report

The evaluation process combined a number of social and technical investigation methods, which were used to collect both quantitative and qualitative information, the methods were:

- *Documentary review:* A review of existing documents which included reports by Daumak Consultants Ltd. on Drilling and Installation of Hand pumps together with that on Social Mobilisation and Siting was carried out.
- *Person to person interviews:* Structured interviews using questionnaires were conducted at the community level targeting water users and Water User Committees respectively. Information collected using this method was of a quantitative nature; this was however supplemented by open-ended questions whose information was qualitative.
- *Observation:* This was used in areas where more accurate and reliable information could only be obtained using observation e.g. hygienic maintenance of water sources, practised hygiene behaviours such as cleanliness of water collection and storage containers and cleanliness of environments around the homesteads.
- *Physical inspection:* An inspection of the boreholes was also carried out to investigate some of the technical aspects e.g. water discharge to measure the yield, lubricating of the chain and handle, firmness of pump head, bolts/nuts and handle, positioning of the washers and the state of the platform.
- *Focus group discussions:* These were carried out with selected community members using Participatory Rural Appraisal Methods. The methods used included:
  - ◆ Community mapping - the mapping exercise was used to assess location and accessibility to PLAN provided water sources including the size of the village and the number of households which have access, other existing water sources including traditional ones being used by the community, distance travelled etc.
  - ◆ Hygiene behaviour tool – was used to assess people’s knowledge on commonly perceived positive and negative hygiene behaviours in the community, the most prevalent practices and community’s perception/attitude towards both.
  - ◆ Roles and responsibility tool – This was used in the assessment of Operation and Maintenance issues; identifying the different roles played by the different stake holders and the existing situation in the community.
- *Discussions with Selected Key informants:* Discussions were held with consultants (Daumak) who carried out the siting and drilling supervision as well as community mobilisation and training. Further discussions were also held with Luwero district officials and PLAN International staff both from the Country Head Office, the Luwero Programme Office as well as Bamunanika and Katikamu Programme Unit Offices.

Discussions were also held with handpump mechanics and spare parts dealers from Luwero and Bamunanika.

## **2 STUDY FINDINGS:**

### **2.1 Effective Use of the Borehole:**

In assessing effective use of the water, the review focused on the percentage of beneficiaries accessing PLAN protected sources, per capital consumption and the safe water chain.

#### **2.1.1 Accessibility of the Water Source:**

The 36 sources installed are 72% of the originally targeted 50, service coverage therefore can also be estimated at the same percentage and this should thus cover 2,783 families out of the targeted 3,865 - at an average household size<sup>2</sup> of 5.5 this is 15,307 people. During the review it was established that not all households in the Project area were using boreholes provided under funding from PLAN. Out of the 374 families interviewed, 302 (81%) were using boreholes, 64 (17%) were using traditional sources and 8 (2%) protected springs. Since average household size is 5.5 people the boreholes are therefore serving approximately 12,780 people.

85% of those using boreholes said it was because water was of good quality while 46% said it was the nearest source. The 17% using traditional sources said, despite the poor quality of water from these sources, it was the nearest available option since protected sources were far.

#### **2.1.2 Water Consumption:**

Directorate of Water Development (DWD) and Ministry of Health (MoH) guidelines say that if health benefits are to be achieved per capita water consumption should be 20 l/p/d. Review findings in the study population was an average per capita of 14 l/p/d; this is 70% of the recommended amount. The review was not able to establish the exact consumption patterns before PLAN intervention but discussions during the PRA revealed that it was lower then. Participants (particularly females) contended that because of the long distances they used to travel especially during the dry season, what ever would be collected would be used sparingly.

### **Recommendations**

In order to improve on the health of the community (use 20 litres per person per day) there is need to promote increased use of water for drinking, personal hygiene (washing of bodies and clothes), and washing of hands before eating and after latrine use. Promotion can be carried out through the normal hygiene promotion channels as well as using social marketing techniques.

In addition there is need to provide more boreholes in order to increase accessibility which will in turn lead to increased consumption

#### **2.1.3 Distance to the Water Source and Time spent in Water collection:**

PLAN target as specified in the TOR is to provide water within 500-metre distance. This has to some extent been achieved because 75% of the families using PLAN boreholes are travelling 500 metres or less, the remaining 25% travel more than 500 metres with the longest being 2 Km. If a borehole is properly functioning and serving an average of 50 households or 300 people per borehole (DWD guidelines), the 75% referred to above should spend less than thirty minutes to collect water. This however was not the case as 44% are spending an average of more than half

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<sup>2</sup> The indicated average household size is calculated based on study findings.

an hour due to queuing resulting from limiting the time of water collection - caretakers lock the boreholes. Although the distance to water source for 75% of the communities covered is within 500m the time spent on water collection is under 30 minutes for 56.3% of the community, between 30 and 60 minutes for 28.1% and the rest (15.5%) spend over an hour on water collection. The main reason for the long time on water collection is because on most boreholes there is limited time for water collection because caretakers lock the boreholes.

## **Recommendations**

There is need to guide the caretakers on what is appropriate number of hours for a borehole to be operated in a day. Caretakers also need to agree with the users on, which are the appropriate times other than setting their own by-laws thereby inconveniencing the users and therefore inducing them to use traditional sources.

25 % of the users cover more than 500m to collect water with the maximum travelling 2 Km. There is need to provide more boreholes in order to reduce the burden of collecting water as well as contribute to higher consumption of water.

### **2.1.4 Water Collection - Who Collects Water:**

The chief beneficiaries from the provided boreholes are the people collecting the water. Though in most communities, water is collected by women and children, in the study area, this responsibility was equally shared. In response to "who usually collects water in this household" women were 29%, men 23%, boy children 25% and girl children 23%. It can thus be concluded that the reduction in the burden of water collection was a benefit to all.

### **2.1.5 Community Satisfaction:**

96% of the respondents who were using PLAN provided boreholes were satisfied with the yields of their sources, this was further confirmed by the technical information where yields for the different boreholes ranged between 300 l/h for the lowest yielding and 7,700 l/h for the highest. Overall rating PLAN provided sources are among the best yielding sources, as the national standard yield at which a borehole should be installed with a handpump is 700m<sup>3</sup>/h and the minimum permissible is 500l/h. The two boreholes with yields below 500 l/h, despite being below the national recommended yields for hand pump equipped sources, were installed because there are no alternative sources for these particular communities. The yields from these sources can be improved through hydrofracturing.

Asked about their assessment of the water quality 94% of the users said they were satisfied with the water quality, the 6% who were not satisfied complained that the water was salty- this is however a small percentage where probably one of boreholes is salty. On the other hand families using traditional sources expressed great dissatisfaction with the quality saying the water is muddy, has particles and is hygienically unsafe despite the fact that some of them were using it for drinking - reason was they were far from boreholes. Among the major benefits highlighted by the community during the PRA discussions was provision of clean safe water, some families who cannot use the boreholes on a regular basis could at least use them specifically for drinking water.

## Recommendations

For the few families dissatisfied with the taste of the water there is need to sensitise them that though the water has salty taste it is safe for drinking. Over time they will get used to the taste. It is clear from families using traditional unprotected sources that their level of dissatisfaction is quite high a factor, which can be built on during sensitisation.

The two boreholes installed with a yield below the nationally recommended 500 l/hour should be considered for hydrofracturing. This should be done together with the three not installed referred to in 1.1 as awaiting hydrofracture.

## 2.2 Sustainability:

In assessing the sustainability of the provided facilities, emphasis was put on the functionality of the sources, institutional and management arrangements put in place, preventive maintenance systems as well as mechanisms to handle future technical problems when they occur.

### 2.2.1 Functioning of the Boreholes:

The study covered all the installed boreholes, which were 36 in number. At the time of the review all the 36 boreholes (100%), were functioning, however seven of them, which represents 19.4% had ever broken down in the past. Repairs had been carried out by local handpump mechanics based at the subcounty level and in all the cases it took less than a week (the national water policy recommends maximum 1 week between breakdowns and 80% of boreholes functioning at any one time) for repairs to be effected. This is an indication that there is a mechanism in place to handle technical problems, which are within the capacity of the local mechanics. However during community discussions it was expressed that these mechanics are too far and at times do not immediately attend to the community concerns as would be desired. The mechanics interviewed stated that delays are caused by failure of communities to collect money.

Regarding the frequency of breakdowns, all the seven boreholes that had ever had problems were reported to have had only one incidence of breakdown. It is however too early to make conclusive decisions based on this information, as all the 36 boreholes are still new - the 18 of Bamunanika Project area being less than one year old while those in Katikamu are around one and a half years old.

An inspection of the technical features of boreholes revealed that they were all functioning properly. Table 2.1 below shows the detailed status.

**Table 2.2.1 Status of Borehole Maintenance (Technical Features)**

Technical Feature	Status					
	Yes		No		Total	
	Number	%	Number	%	Number	%
Firm handle	35	97%	1	3%	36	100%
Firm nuts, bolts and pump head	36	100%	-	-	36	100%
Lubricated handle and chain	18	50%	15	42%	33	92%
Nuts & washers well positioned	36	100%	-	-	36	100%
Satisfactory yield	34	94%	2	6%	36	100%
Un cracked platform	36	100%	-	-	36	100%
Working soak way	23	64%	13	36%	36	100%

## Recommendation

Although the boreholes are functioning very well there is need to institute a monitoring system to ensure the O&M system continues functioning and be strengthened where weaknesses are detected by the monitoring system. It should be noted that these boreholes are new, there is need to be proactive, lessons could also be obtained from the old boreholes in the same subcounties/parishes.

### 2.2.2 Hygienic Maintenance of the Boreholes:

In addition to technical O&M aspects the review looked at the hygienic maintenance of the water sources. Areas of investigation included: cleanliness of the surroundings, whether the drainage channel and soak pits were working and the clearance of bush/grass in the area surrounding the borehole. Findings indicate sources were fairly well maintained but require improvements on environmental hygiene. 22 of the 36 boreholes had bushy surroundings and 15 boreholes had dirty surroundings Table 2.2 gives the details.

**Table 2.2.2 Status of Boreholes Maintenance by Hygienic Indicators**

Maintenance Indicator	Well Maintained		Poorly Maintained		Total	
	Number	%	Number	%	Number	%
Surrounding Cleanliness	21	58%	15	42%	36	100%
Drainage Channel	33	92%	3	8%	36	100%
Soak Pit	25	69%	11	31%	36	100%
Grass in Surroundings	14	39%	22	61%	36	100%

## Recommendations

There is need to follow up with users so that they can improve on the environmental hygiene around the water sources.

As part of post construction activities PLAN should put in place a monitoring system, which will ensure continued information flow regarding the status of these sources and follow up actions to be taken.

### 2.3 Institutional, Operation and Maintenance Aspects:

#### 2.3.1 Selection, Composition and Functioning of Water User Committees:

Management structures set up by PLAN are focussing on community management with the Water User Committees being the major institution responsible for the day-to-day maintenance of the water source which is fully in line with the National policy. The committees are to be supported by the Trainers of Trainers (TOTs), PLAN Officials and the Local Councils. From the review it was established that all the installed 36 boreholes had Water User Committees who were selected by the users themselves - it was only in three cases where Local Council seem to have influenced the selection as is indicated in the table below.

**Table 2.3.1 Selection of Water User Committees:**

How was the Committee Formed	Selected by User		Selected by Local Council		Total		
	No.	%	No.	No.	%	No.	%
	33	92	0	3	8	36	100

Though the majority of the WUC members consented to the responsibilities given to them by the community that selected them, the review found a problem regarding their commitment. All the committees were selected during the initial stages (before siting) hence most members are located in the initially identified sites, unfortunately the majority of these sites were not hydro geologically feasible and the boreholes were finally drilled in different locations. The change led to dissatisfaction and demoralisation for most of the members and they are now no longer active.

### **Recommendations:**

There is need for PLAN to design a mechanism for monitoring and support follow up and also form new committees for every source based on actual users as these will have commitment to the sources. During the follow ups emphasis should also be put on empowering communities to take decisions and effect change where necessary. At the moment they fear to take administrative related decisions e.g. enforcement of opening times for the borehole, change of non-cooperative caretakers and WUCs, they say such decisions can only come from above i.e. for PLAN Officials. .

### **2.3.2 Committee Composition:**

The total membership of each WUC varied from one source to another but principally each committee comprises of a Chairperson, Treasurer, Secretary, two Committee Members and a Caretaker. In most cases the second committee member doubles as a caretaker because each borehole is supposed to have two caretakers. Caretakers are paid an average of 5,000/= per month for their services and they are therefore charged with the responsibility of collecting the funds. Since they are direct beneficiaries they have also taken on the role enforcing contributions by denying water to families, which have not contributed.

As part of gender promotion women are encouraged to actively participate in PLAN activities and taking up positions of responsibility on committees. It is not clear what guidelines were given to the community at the time of committee formation, regarding women representation, however, active participation has been registered as indicated in the findings where 33% of the membership on the WUCs comprises of women. In 34 of the cases women are in decision-making positions either as Chairpersons Treasurers or Secretaries. Table 2.3.2 shows WUC membership desegregated by gender.

**Table 2.3.2 Composition of WUCs by Gender.**

Position	Female		Male		Identity Un Known		Total	
	No.	%	No.	%	No.	%	No.	%
Chairperson	4	11%	31	86%	1	3%	36	100%
Treasurer	19	53%	13	36%	4	11%	36	100%
Secretary	11	31%	19	53%	6	17%	36	100%
Committee Member*	26	36%	35	49%	11	15%	72	100%
Caretaker	11	31%	21	58%	4	11%	36	100%
<b>Total</b>	<b>71</b>	<b>33%</b>	<b>119</b>	<b>55%</b>	<b>26</b>	<b>12%</b>	<b>216</b>	<b>100%</b>
*Percentages for Committee members have been calculated based on 72, which is total membership for all committee members on the 36 boreholes.								

**2.3.3 Sustainability of the Water User Committees:**

Out of the 36 WUCs, only 5 had changed membership since inception, three of these were due to inactive participation, one due to immigration and the other due to death. This might not appear as a big problem now, but it should be noted that most of these committees are new - none of them is two years old.

*NB: Reference should also be made to the what has been highlighted in section 2.3.1 of the report that some WUC members are no longer active because they did not benefit as a result of the final location of the boreholes.*

The community also appears not to have been given guidelines on the life span of the committees nor how to effect replacements. In response to the question of how often membership should be changed and what procedures to follow, 13 of the 36 committees said it is not yet considered while 4 said when the committee is inactive/inefficient.

**Recommendation:**

In the follow up mobilisation/support, there is need to develop guidelines on committee lifetime as well as procedures for change of membership. WUCs being voluntary it is being recommended that each committee serves for a maximum of two years unless if the community wants to retain it and the committee members are willing to serve for another term.

**2.3.4 Spare Parts Supply and Repair System**

In addition to interviewing communities an assessment of the state, capacity, qualification and services of the Spare Parts Dealers (SPD) in the district was carried out through discussions and observation. The outcome is as follows: -

- Only one SPD exists in the whole district of Luwero and is located in Luwero/Kasana Township. He runs a business called Water is Life 2000.
- The dealer is also a Hand pump mechanic by profession.
- He has all parts in stock ranging from the frequently bought parts like the cylinders and it's components to other parts like the pedestal, tank and head assembly.



- He also supplies some parts of Nakasongola and Luwero districts with spares for the boreholes.
- The parts are purchased from Kampala stores
- The dealer is well established and stocked and in addition to selling spares is carrying out rehabilitation of boreholes and construction of Hand dug wells by the district in addition to working as a pump mechanic in Luwero.

An assessment of the state, capacity, qualification and services of the Hand Pump Mechanic (HPM) in Ziobwe, Bamunanika and Luwero Subcounties was carried out and the findings are as follows:-

- The mechanics for Ziobwe and Bamunanika were trained in 1995, and the mechanic in Luwero who is also the Spare Parts Dealer had received training by Unicef in 1986 under Directorate of Water Development. The training in 1986 was specifically to handle U2 hand pumps and 1995 training was for U3 hand pumps. The mechanics were provided with tool kits at the end of the training.
- The tool kits have never been replaced and some components like the pipe vice, rod vice, pitch button die, spanners, coupling tool are worn out.
- No HPM is full time involved in the job except for the one in Luwero/Kasana town ship who is both a SPD and HPM.
- The prevailing prices of the spares are affordable. Problems are only encountered when the Water User Committee have not been active in the collection of the service charge for the water source for a particular source and there is no money on the bank account.
- Preventive maintenance by the HPM is not being carried out because the communities tend to think that it's not necessary and are not willing to pay for the services.

Problems facing the HPM's

- Non-payment of the labour charges by the communities.
- Transport.
- Incomplete tool kits
- The new pumps installed are the modified version using the PVC risers U3M and the tool kits supplied are for the U3 with stainless steel risers, which are not compatible.

## **Recommendations**

- Tool kits require constant updating as the borehole technology advances, there is need to acquire tools that are adapted to that particular type of pump (i.e. the tools used for U3 are not the same as U3M). Since the pump mechanics operate as private entrepreneurs PLAN should consider giving the HPM loans in form of tools for the new handpump type. This will help reduce on the expenses incurred when a break down has occurred. The mechanics should be encouraged in future to budget for tools since the concentration of pumps has increased. For future mechanics there is need to make it clear from the beginning that replacement of tools is their own responsibility.
- Re-sensitise the HPM and the WUC to operate a diary/keep records this will help on the assessment of the frequency of breakdown, and any other activities associated with the borehole.

## **2.4 Training**

The initial arrangement in the first set of boreholes drilled in 1999, was for Plan (staff contracted directly by Plan) to train WUCs, this approach however later changed in favour of using community based trainers commonly known as Trainers of Trainers (TOTs - one per parish). The TOTs were taken through a one-week residential training conducted by a consultant (Daumak Consultants Ltd) and they in turn were supposed to train both the WUCs and community members. In total 26 participants of whom **only one** was a woman were trained and the areas covered included:

- Project objectives, principles and approaches including implementation schedule.
- Roles and responsibilities (of both TOTs and the community)
- Knowledge and skills of community mobilisation using participatory approaches
- Sanitation and hygiene promotion skills

During the study, the team was able to meet five of the trained TOTs all who were clear on their roles and expressed confidence in capacity to pass on the training to the lower levels. It can thus be concluded that at this level the training was successful with exception of having limited the inclusion of female participants. For future training there is need for affirmative action to increase female participation - this should be included in the guidelines at the time of participant nomination. The presence of women trainers can also be a mobilisation tool for women participation as it helps building confidence that women are capable of taking places of responsibility and that they can provide the required service.

While the programme of TOT training was successful, the review found a gap at the WUC and community levels with the trainings not having been reciprocated as had been expected. All the community members interviewed say they had not received any training on hygiene and O&M while only 22 (61%) WUCs reported that they had been trained. Detailed discussions with trained committee members also revealed that some of them could not clearly remember what they were trained on. Those who could remember, gave the following as the areas that were covered: - borehole maintenance - 30%, sanitation and hygiene promotion - 25%, cleanliness of water collection/storage containers - 15%, fencing of the borehole 8% and collection of O&M funds 7%. Furthermore both the trained committees and TOTs confirmed that they had not received any support follow up and guidance in implementation of their duties. The TOTs went on to say that it is unclear whom to report to or approach for support and or advice.

## **Recommendation**

The TOTs should receive refresher training and follow up be made on communities to cover the identified gaps. During community work the TOTs should have clear targets and follow up should be made by PLAN unit offices to ensure the targets and quality outputs are met.

## **2.5 Social Economic Factors**

### **2.5.1 Operation and Maintenance**

At the beginning of the Project, every Water User Group (WUG) was supposed to contribute a start up fund of 180,000/= payable on the WUG's account, the money was part of the O&M fund which was supposed to be supplemented by monthly or annual contributions after pump installation. It was established during the review that most respondents contributed the initial amount though some of them ended up not benefiting from the sources because of distance. Communities were however not fully informed about the reasons for their contribution with some of them being told that it is membership fee to enable them become members of the Water

User Group, and it is only then that they can access the borehole. The committees were also not given guidelines on how to collect the funds which led to each committee coming with its own mode of collection. The following are the collection methods, which were identified in the field:

- ◆ An individual household pays the set amount of the start up fund and then pays a monthly contribution, which varies with each WUC.
- ◆ An individual household pays the set amount of the start up fund which qualifies him to become a user (in the community it is being referred to as membership fee) then he/she either pays a monthly contribution of 1,000/= per month or an annual of 5,000/= per year.
- ◆ Individual household pays a start up fund and then has to pay an annual contribution as agreed on by the community (WUC).

*NB: It was reported that for any household to access the borehole, it must pay the start up fund. This is also applicable to new users who may not have been members of the WUG at the time of inception.*

With regard to actual contributions, 71% of the households using the boreholes said they do contribute the required monthly contributions - average was calculated at Uganda Shillings 460/= per month ranging from 100/= for the lowest to 2500/= for the highest. Although 71% of households interviewed reported making regular contributions, during focus group discussions using the participatory methodologies, actual response to contributions was reported to be poor.

### **Recommendation:**

Though the idea of each committee having its own by-laws on O&M is encouraged, there is need to provide the community guidelines on amounts and modes of collection, so that unscrupulous WUCs do not take communities for a ride. The committees should have accountability meetings with users in which contributions and expenditures are discussed.

## **2.6 Problems associated with O&M of Boreholes:**

### ***Boreholes at Schools***

- Operation and Maintenance of boreholes located at schools was found to be very poor mainly due to the school children that the caretakers find difficult to control.
- Beneficiaries to the water points comprise of two categories of families – those with foster children and those without. The two categories have divergent attitudes towards their role in operation and maintenance of water facilities.
  - Some of the families with foster children say they shouldn't pay O&M funds citing that the sources were provided because of their children. Their attitude is that community members should be grateful to them since it is because of their children that they received a water source.
  - On the other hand, some of the families who do not have foster children, tend to dissociate themselves from making contributions for O&M. They say it is families benefiting from PLAN (meaning those who have foster children) who should pay.

**Recommendation:**

If sustainability is to be achieved and benefits accruing from provided facilities maximised, it is important that all community members take the boreholes as their own and actively participate in the O&M process including payment of O&M contributions. Further mobilisation and sensitisation with clear information on why and how O&M funds are collected is therefore required. PLAN should draw up a post-construction mobilisation and monitoring programme.

There is need to follow up all boreholes located at schools and ensure that the school management forms part of the WUC preferably with a teacher specifically assigned this responsibility. The role of the teacher should be to ensure student control in the use of the water source. The two communities (school and the rest of the community) should also agree on the best times when to access the source as the community members were complaining that during times when the students are out of class it is difficult for the rest of the users to access the borehole.

***Accountability***

There seems to general lack of accountability in all the WUCs, as none of the community members reported having ever been called for an accountability meeting nor issued receipts for the moneys contributed.

**Recommendation:**

It is very highly recommended that WUCs introduce issuing of receipts for all moneys contributed and hold regular accountability meetings (at least quarterly). It is only then that users will have confidence in their committees and a continued commitment for contributions thereby leading to sustainable functioning water sources.

**2.7 Hygiene Promotion**

The Review team was informed that hygiene messages are spread through household visits, community meetings and by caretakers at the water collection points. The strategy of household visits and community meetings seem not to have been satisfactorily carried out with only 32% of the families having been visited by a health worker in the last three months prior to the review and none had ever been invited for participation in a community meeting. For those who had been visited promoted messages included the need for and advantages of drinking clean safe water with emphasis being put on using protected water sources and keeping water collection and storage containers clean. Other messages were on proper garbage disposal, construction and use of latrines, construction of kitchens, and construction of drying racks, hand washing after latrine use.

Despite the low percentages of household visits by PLAN trained community based workers, a considerable percentage (63%) had been exposed to hygiene messages through other channels, which include radio, community leaders/local authorities. Other channels mentioned but on a very small scale are posters, hospitals, family members, and school students. The messages received are similar to those given under the first paragraph in 2.7.

In conclusion an average number of people have been exposed to hygiene education. However change in behaviour seems to be slow as most of them during the PRA, identified themselves with unhygienic behaviours such as, children defecating behind the latrine and within the compound, lack of bath shelters, sun tables and kitchens, defecating and urinating in the water sources and poor domestic waste water drainage systems. Furthermore the community was not practising the safe water chain as expected 55% had dirty collection containers and more than 70% of them were not covered. Regarding water storage, a considerable number more than 70% had separate containers, which were clean and covered. This however is not satisfactory as by the time the water is put in the storage containers it is already contaminated during the collection process

General environmental cleanliness was also average as only 51% of the homesteads had clean surroundings.

### **Recommendations**

Discussions with PLAN official revealed that the problem of slow response in behaviour change has been recognised as one of the major challenges for the programme. To this effect Community-based Resource Persons (CORPS) have been recruited (one per parish) and their role is to sensitise communities on all health related aspects e.g. sanitation and hygiene, immunisation, nutrition, AIDS etc.

To address the problem of hygiene in schools, PLAN is producing a hygiene promotion booklet focusing mainly on school children. The booklets will be distributed to all supported schools.

The above efforts are highly appreciated and the review consultant recommends that continued sensitisation is paramount, however, since knowledge on health effects seems high but practice is low other marketing strategies should be used. The benefits of improved hygiene behaviours and the relationship between the benefits, the diseases, the family incomes and expenditures i.e. "Improved sanitation is wealth" should be promoted. Furthermore, both the CORPs and TOTs should be helped to plan together so as to maximise services to the community and avoid duplication of efforts.

### **3 FINDINGS BASED ON PARTICIPATORY APPRAISAL DISCUSSIONS**

#### **3.1 Introduction:**

PRA was used to supplement information collected using the household questionnaire. PRA discussions were held in five of the seven sub-counties covered in the evaluation using the following methods and tools:

- ◆ Community Mapping
- ◆ Roles & Responsibilities
- ◆ Hygiene Behaviour (Three Pile Sorting)

#### **3.2 Aspects of investigation included:**

- ◆ Users' satisfaction with the service provided
- ◆ Community's rating of average distance during the process of water collection.
- ◆ Average time spent in water collection
- ◆ Percentage of households in the village accessing a protected water source (PLAN provided water source)
- ◆ Changes in water utilisation
- ◆ Community participation and involvement in Project activities
- ◆ Operation and maintenance of provided facilities.
- ◆ Community capacity building
- ◆ Hygiene education (looking at Knowledge, Attitude and Practices)

#### **3.3 Community Mapping:**

During the survey communities were able to draw their village maps indicating the boundaries, road infrastructure, originally preferred borehole sites, the existing sources (both protected and unprotected), location of the different households including those of their leaders and the WUC members in relation to the source location. They were also able to indicate the location of other social service infrastructures such as schools, churches, mosques, clinics/drug shops and essential commodities' shops. For each community, the borehole service catchments area was also identified.

Based on the findings on the village map, further discussions were held to generate other information which could not be indicated by the map such as people's hygiene habits, their perception of benefits accrued from the project, role perceptions etc. The details of the findings are as indicated in the Table at end of this annex.

#### **3.4 Roles & Responsibilities Tool:**

Pictures of various activities concerning the use, management, and maintenance of boreholes were used within the communities to assess the level of understanding regarding operation and maintenance of the boreholes. These pictures were also used to assess the extent to which these activities were being carried out and how they relate with the different stakeholders in the O&M process.

It was revealed during the discussions that communities were able to identify the various activities and could easily relate them with the different stakeholders. However some of the

activities were not being carried out e.g. home visiting, WUC meetings, community accountability meetings, payment of O&M fund, and maintenance of drainage channels.

PLAN advocates for a community based Operation and Maintenance system. The strategy was to facilitate selection and training of a Water User Committee for every source the committee is in turn responsible for operation and maintenance of the borehole. In the five communities where discussions were held only one committee reported having been trained but it had not received any support follow up and tools e.g. spanners<sup>3</sup>. In another (Mpologoma) the PLAN trained TOT was the caretaker but he was yet to train the rest of his committee members – this borehole was the best maintained in the Project area and this could be attributed to the maintenance by the caretaker.

### **3.5 Hygiene Behaviour Tool:**

A set of un-serialised pictures depicting different hygienic and un-hygienic practices were used to assess the ability of the community to identify and analyse the activities into “good”, “bad”, and “in-between” practices. They were also used to establish the common and uncommon practices in the community.

During the group discussions, it was easy for the community to understand the different practices and sort them into the various categories. This was enough evidence to indicate that the community was well knowledgeable of what it is supposed to do. Unfortunately, most of the common practices, were those that were unhygienic for example, children defecating in the compound and behind the latrine, lack of bath shelters, sun tables and kitchens, defecating and urinating in the water sources (for those communities using the traditional sources) and poor domestic waste water drainage systems. When asked as to why they were still practising such unhygienic behaviours, they said that is was due to not paying serious attention to benefits of good hygiene practices as well as laziness for those not having latrines. Members were however, able to clearly enumerate the effects of bad practices as being sickness, poverty and death. This was clear evidence that the community had the knowledge but had not fully internalised the benefits of practising good hygiene practices.

In all the communities where discussions were held (except Gayaza in Kikyusa subcounty) it was established that the community had not received any training in hygiene education nor had there been any support follow up regarding hygiene promotion to the TOTs or the WUCs. The participants were however able to identify the TOTs from their parishes but said none of them had ever visited their homesteads, nor called them for community meetings

### **Recommendation**

Behaviour change takes time and needs continuous reminding. There is therefore need for a serious follow up on the trained TOTs and WUCs to ensure they disseminate to the community, the messages passed on to them. For effective results the TOTs also need to be facilitated with logistics such as bicycles and training tools. The few that the investigating team talked too acknowledged receipt of participatory materials meant to facilitate community training but lacked some other basic ones e.g. manila papers, newsprints, markers etc. As stated in sections

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<sup>3</sup> An assessment of all the 36 WUCs revealed that 22 committees (61%) were trained

2.1.2 and 2.7 there is need to promote behaviour change using various social marketing techniques apart from linking to health benefits.

### **Areas of concern raised by the community**

- The long distance for some families as well as the long queues at the source has led to some people using borehole water only for drinking and for the rest of domestic activities they use traditional sources, which are poor quality. These are the same sources, which these communities previously used for all activities including drinking.
- Community participation: At the start of the Project, community meetings were held and the purpose of the meetings was to introduce the Project to the community. This was followed by communities expressing their demand for a water source through a written application to PLAN International. Before detailed hydro geological investigations could be carried out, the community selected three preferred sites in order of priority. Unfortunately in most of the cases the selected sites were not hydro geologically feasible and this resulted in boreholes being located at one corner of the village and therefore serving a smaller population than otherwise intended.
- Users reported having been required to collect a start up fund of Ug. Shs 180,000/=. The start up contribution was a precondition by PLAN and all communities had to fulfil this requirement before drilling could start. After installation, each household is expected to contribute towards operation and maintenance and the amount varies depending on what is agreed on among the users. Communities expressed ignorance about the use and management of this money nor were they given receipts in acknowledgement of their moneys. They expressed a fear that these fund might be mismanaged
- In the discussions it was also revealed that despite the Principle of O&M contribution being universally accepted among all the users, the practice of actual contribution was poor. Some community members believed that since it is because of their foster children that the sources were provided, there is therefore no need for them to contribute anything in fact the users should be grateful that they offered their children.

### **Benefits from PLAN as Given by the Community**

- Support for foster children
- Provision of clean safe water for the families using the source
- Improved Health through -
- Reduction in water related diseases e.g. diarrhoea



### SUMMARY FINDINGS FROM PRA DISCUSSIONS:

Variables	Subcounties				
	Kikyusa	Ziobwe	Kalagala	Nyimbwa	Bamunanika
Parish	Wankanja	Bubuubi	Kalanamu	Kiyanda	Mpologoma
Village	Gayaza	Kabuwomero	Kalanamu	Kayunga	Mpologoma
Total Participants in the PRA discussion	13	13	20	12	22
Female participants	6 (46%)	4 (31%)	7	5	11 (50%)
Protected sources in the village (Number)	-	1	1	1	2
PLAN provided boreholes (Number)	1	1	1	1	1
Boreholes provided by other agencies	-	-	-	-	1
Traditional Sources (Number)					2
Households in the village	320	60	150	350	100
Households in the village accessing the PLAN provided source	200 <sup>1</sup>	40	50	50	44
Households accessing the PLAN provided source (Percentage)	87%	67%	33%	14%	44%
Distance of farthest home using the source	2 Km	2 Km	2 Km	2 Km <sup>2</sup>	1 Km
Distance of farthest home in the village ( <i>NB: Not benefiting</i> )	2 Km	2 Km	2 km	1.5	2 Km
Average time taken in water collection when there is no queue	1 Hour		45 Minutes	2 Hrs	
Average time taken in water collection (including waiting time)	2 Hrs	11/2 Hrs	11/2 Hrs	1 Hr 45 Min	1 Hr
O&M money on account (including start up fund)	200,000/=	73,000/=	Not Known	72,000/=	Not known
Agreed O&M contributions per household per month	500/=	250/=	400/=	150/=	None

<sup>1</sup> Another 250 families from the neighboring villages are also using the same borehole

<sup>2</sup> There is however a steep slope which discourages people to cross

#### **4 CONCLUDING STATEMENT**

The purpose of the Consultancy was to evaluate the potable water project in Luwero, which was carried out with support from PLAN International Uganda with funding from NORAD.

Below are some general conclusions.

- Overall conclusion is that the community applied for the boreholes based on felt need, were involved in the site selection.
- The Consultant carried out the training of community based trainers. The community-based trainers carried training of some of the communities/communities but did not complete all the training due to lack of follow up. There is need to carry out the training and follow up support to communities/committees not yet trained.
- The boreholes were well constructed and a functioning well. A system is in place for O&M of the boreholes.
- The mechanics do not have the tools for the new modified pumps U3M. Arrangements should be made for the mechanics to acquire the tools either directly or through loans.
- No post construction training has been provided to the communities. There is need to provide post construction training to communities to ensure sustainability of the new installations and strengthen the O&M system. PLAN should set a post construction monitoring system for at least a year after construction followed by periodic reviews of the already installed boreholes. From the Consultancy one major area for post construction training and follow up is the accountability of O&M funds.
- The general satisfaction of the communities is high.
- The knowledge on health benefits of the project is high but the hygienic practices are still poor. During follow up there is need to follow up on behaviour change.
- The project has followed the national guidelines and in some cases has adopted higher standards (minimum walking distance to a handpump in the National Water Policy is 1500m while the project adopted 500m). Experiences from the project should be shared with other stakeholders i.e. Government and other NGOs through the Water and Sanitation NGO Forum.

The overall conclusion is that the project implementation (initial mobilisation and training, and siting and construction of boreholes) was carried out well but post construction mobilisation and training has not taken place. PLAN unit offices should carry out systematic post construction training and post follow up.

**ANNEX 1**  
**TERMS OF REFERENCE**

TERMS OF REFERENCE  
**FINAL EVALUATION – POTABLE WATER, LUWERO, UGANDA**  
**UGA-97/031 (NORAD)**

**1. Background**

Project information

UGA-97/031 Potable Water, Luwero, Uganda

Donor: NORAD

Project duration: 1999-2001

Total budget: NOK 4.1 mill. (Approx. USD 476.700)

Luwero District suffered social infra-structural destruction due to the civil wars from 1981-1985. It was not until January 1986, that the present government came into power and things started getting back to normal. The war had, however, destroyed all the socio-economic amenities thus setting the country aback.

Plan Uganda started working in the most affected district at that time, Luwero, the cradle of the bush war. A Plan study carried out in 1997 indicated that 17% of the households reported that in the last two weeks before the study, they had a child suffering from serious diarrhoea. Furthermore the study indicated that 62.1% of the population considered water as the largest community problem.

The Potable water project came as a result of the severe lack of water in the district. This compounded problems of dropout in schools, unhygienic homes, mothers and children walking long distances in search for water and a lot of time that could otherwise be used for more profitable ventures wasted in search for water.

DFID supported the first phase of this project. The project was carried out between 1994-1999, and aimed at establishing 100 boreholes. PLAN Uganda's aim was 150 boreholes. In order to achieve this goal, PLAN Norway submitted a proposal to NORAD for the remaining 50 boreholes.

The objective of the project was to provide the rural population of Luwero with easy access to potable water within 500 meters from their homes. The goal was to drill 50 boreholes and install handpumps over a three-year period from 1999 – 2001. Altogether 3865 families in 19 parishes were expected to benefit from the project. The Project involved local communities and various levels of local authorities at all stages of planning, implementation and monitoring. Sensitisation meetings and workshops for communities and leaders were held and water user committees (WUC) were formed and trained. A consultant (Daumak) and a drilling contractor (Drillcon) carried out this training, hydrogeological siting and borehole drilling and construction.

**2. Purpose**

The evaluation has four general objectives, namely:

5. To assess the degree of accomplishment of the stated objectives.
6. To review the project implementation and especially the extent to which the activities as specified in the original agreement have been implemented.

7. To identify general areas and important strategies and modalities where further action is required and if necessary recommend appropriate actions to be taken.
8. To assess the mode and effect of collaboration with local authorities

### **3. Scope of Work**

#### **Variables for use in the evaluation:**

Three main variables are suggested used in the evaluation. For evaluating these, several indicators can be used, of which we have suggested some that could be of relevance for measuring the attainment of the project objectives (the consultant is expected to suggest alternatives/additions).

The variables are:

- a) Effective use
- b) Sustainability
- c) Replicability

#### **a) Measuring effective use**

##### **Optimal use**

Users:

- What percentage of total target population is using improved facilities as per originally planned?
- Who are the users/non-users?

Quantity:

- Changes in water consumption
- Changes in water utilisation

Time use:

- Time spent
- Alternative time use
- Possible changes in responsibilities

Environment

##### **Hygienic use**

- Water quality
- Transport and storage practices
- Site and home cleanliness

#### **b) Sustainability**

##### Technical aspects

- No. and functioning of boreholes
- Technical quality
- Availability and affordability of tool kits and spare parts

**Institutional, operation & maintenance aspects**

- Selection, composition and functioning of the WUC
- Gender roles
- WUC role and responsibilities
- The relationship between WUC and individual users of boreholes
- How does the project comply with the policies of the Ugandan Directorate of Water Development?

**Socio-economic aspects**

- Equal access
- Effectiveness and sustainability of WUC
- Capacity building: financial management, operations and maintenance
- Relevance for the rights of the child

**c) Replicability**

- Uptake of similar plans by other communities/NGOs
- Policy support (within government's framework)

**4. Implementation**

The review shall be carried out in the period of 16 May – 13 June 2001. It is expected that the Evaluation Team will confer with Plan Uganda staff, the Project Consultant and the drilling contractor and review relevant project documents. It is also expected that the Team will meet local authorities, members of the target groups and visit the project sites in Luwero,

By the 7<sup>th</sup> of June 2001 it is expected that the Evaluation Team submit 3 copies of the draft report. PLAN Uganda will check this report for possible factual/technical errors. The final report shall be submitted in 5 copies, with a soft copy on diskette, by the 13 of June 2001. PLAN Norway shall then submit the report to NORAD. The review Team will hold a debriefing for PLAN and the Norwegian Embassy after NORAD has reviewed the report.

**ANNEX 2**  
**LOCATION OF PROVIDED BOREHOLES**

**PLAN PROVIDED BOREHOLES (FUNDED UNDER NORAD)**

<b>No.</b>	<b>Subcounty</b>	<b>Parish</b>	<b>Village</b>
1.	Kikyusa	Kibengo	Kyepukulu
2.	“	“	Kayonza*
3.	“	Kyampogola	Masinga
4.	“	“	Kyampogola
5.	“	Kiziba	Kyakatula
6.	“	“	Senyomo B
7.	“	“	Kinamirembe
8.	“	Wabusana	Gambirana
9.	“	“	Wabusana
10.	“	“	Buzibwera
11.	“	Kireku	Mulungiomu
12.	“	“	Kiwanguzi
13.	“	“	Senyomo A
14.	“	Wankanya	Lusanja
15.	“	“	Musanje
16.	“	“	Gayaza
17.	Zirobwe	Kyetume	Kyetume*
18.	“	Bubuubi	Nawakofu/Lutozi
19.	“	“	Kabuwomero
20.	“	Nambi	Namakofu
21.	“	Bukimu	Zirobwe
22.	“	Ngalonkalu	Kajjawo
23.	Nyimbwa	Saabwe	Ndejje
24.	“	“	Buyego
25.	“	Kiyanda	Gunda
26.	“	“	Kayunga
27.	“	“	Namabale*
28.	Bamunanika	Mpologoma	Mpologoma
29.	“	Sekamuli	Mputte
30.	“	Kibanyi	Kyabbuga
31.	Katikamu	Kikoma	Kibike
32.	“	Buyuki	Kachampa
33.	Luwero	Kikube	Nakinyama
34.	“	Kasaala	Katundu
35.	“	Kagugo	Kyetume
36.	Kalagala	Kalanamu	Kalanamu
37.	“	Busiika	Lubanyi
38.	“	“	Namuganja
39.	Bombo Town Council	Lumule	Gangama

- Boreholes Drilled but not installed because of low yield, total number of drilled sources therefore were **39** and those installed were **36**.



**ANNEX 3**  
**LIST OF SAMPLE AREAS**

SELECTED SAMPLES AREAS – PLAN REVIEW (LUWERO DISTRICT)

SUBCOUNTY	PARISHES	VILLAGES
Kikyusa	Kiziba	Senyomo-B
	Wankanya	Gayaza
	Wabusana	Gambirana P/S
Bamunanika	Mpologoma	Mpologoma
	Kibanyi	Kyabuga
	Bubuubi	Kabuwomero
	Ngalonkalu	Kijawo/Ngalonkalu
Kalagala	Bisiika	Lubanyi
	Kalanamu	Kalanamu P/S
Nyimbwa	Kiyanda (Gunda)	Gunda
	Kiyanda (Kayunga)	Kayunga
Luwero	Kikube	Nakimanya
	Kagugo	Kyetume
Katikamu	Kikoma	Kibike
Nyimbwa	Ssambwe	Buyego

**ANNEX 4**  
**PARTICIPATORY APPRAISSAL TOOLS USED**

**ANNEX 5**  
**QUESTIONNAIRES AND TABLES FROM COMMUNITY AND**  
**TECHNICAL INTERVIEWS**

## Community Questionnaire:

### *Identification Information*

1. Subcounty .....
2. Parish. ....
3. L.C. 1 Name .....
4. Source Name .....

### *Demographic Characteristics*

5. No. household members
  - a) 0-5      Years    (Girls)-----                      (Boys) -----
  - b) 6-13     Years    (Girls)-----                      (Boys) -----
  - b) 14-18 Years      (Girls) -----                      (Boys)-----
  - c) Above 18          (Women)-----                      (Men)-----

### *Water Supply (Source)*

6. Where do you usually collect your water from?
  - a) Borehole
  - b) Protected Spring
  - c) Piped Water (Tap)
  - d) Traditional Well/River/Lake/ Unprotected Spring/Dam
7. What is the distance in metres to the water source from your house?
  - a) Less than 500m
  - b) 500
  - c) 501- 1000m
  - d) 1001-1500m
  - e) 1501-2000m
  - f) More than 2000m
8. How long does it take the household to collect water from this source including waiting time per day?
  - a) Under 30 mins
  - b) 31- 60 mins
  - c) 1 hour - 1.5 hours
  - d) 1.5-2 hours
  - e) 2-3 hours
  - f) Over 3 hours
9. If More than 30 Minutes - what is the problem
  - a) There is along at the source
  - b) The source is far

- c) Children spend time playing on the way
- d) Others (Specify).....

10. Why do you use this source of water?

(You may circle more than one answer)

- a) Water is free
- b) Near to house
- c) Water is of good quality
- d) Cheaper than other sources
- e) No other source
- f) Other (Specify) .....

11. What is the total amount of water used by household per day on average in litres? (*Enumerator ask for number of jerricans and compute total*) ..... Litres

12. Are you satisfied with the **quantity** of water you collect? Yes/No

13. Are you satisfied with the **quality** of water you collect? Yes/No

14. If No What is the Problem

- a) Water is salty
- b) Water has particles
- c) Water is Muddy
- d) Others (Specify).....

15. Do you pay for the water you use Yes/No

16. If Yes how much do you pay per jerrican

- a) 25/=
- b) 50/=
- c) 100/=
- d) 150/=
- e) 200/=
- f) 500/=
- g) Others (Specify).....

17. Who usually collects water in this household?

- a) Boy Children (below 13 years)
- b) Girl Children (below 13 years)
- c) Women
- d) Men

18. Does the household pay any money for operation and maintenance Yes/ No

19. If yes - How much do you pay per month Shs? .....Per Breakdown Sh.-----

### **Health Education**

20. Has this household been visited by a Health Worker in the last three months? Yes/No

21. If yes - where was the Health Worker from? (*You can circle more than one answer*).

- a. PLAN International
- b. DUAMAK Consultants

- c. Local health authorities
- d. Other organisations
- e. Do not Know
- f. Others (Specify) .....

22. What did the Health Worker/s talk about? (*You can circle more than one answer*).

- a. Clean water storage
- b. Drinking clean water
- c. Proper garbage disposal
- d. Immunisation
- e. Advantages of using safe clean water
- f. HIV/IDS
- g. Others (Specify) .....

23. Have you received any hygiene messages through other means other than the health workers?  
Yes/No.

24. If yes through what means?

- a. Radio
- b. Posters
- c. Booklets
- d. Others (specify) .....

25. What was the message about? (*You can circle more than one answer*)

- a. Keeping the household and the environment clean
- b. Drinking clean, safe water
- c. Cleaning of the water container
- d. Proper use and maintenance of pit latrine
- e. Washing hands after using latrine and or before touching food
- f. Proper garbage disposal
- g. Domestic waste-water disposal
- h. Construction of drying racks
- i. Immunisation
- j. HIV/Aids
- k. Others (specify) .....

#### ***Observation Checklist for Water Transport***

26. Is the container for collecting water clean? Yes/No

27. Is the container covered? Yes/No

#### ***Observation checklist for water storage***

28. Does family have a separate container for storing drinking water? Yes/No

29. Is container clean? Yes/No

30. Is container covered? Yes/No

31. Is there a separate scooping cup? Yes/No

32. Is the environment around the house clean      Yes/No



### ***Borehole Technical and Community Management Information***

1. Subcounty .....
2. Parish .....
3. L.C. 1 Name .....
4. Source Name .....
5. Source Number.....
6. Condition of water Source
  - 1) Clean Surroundings Yes/No
  - 2) Drainage Channel Working Yes/No
  - 3) Cleared grass Yes/No
  - 4) Soak Pit Available Yes/No
7. Is the borehole functioning Yes/ No
8. If **Yes to 7** has it ever broken down Yes/No
9. If **Yes to 8** who carries out the repairs
  - 1) Local Handpump Mechanic
  - 2) Do not Know
10. On Average how long does it take to repair a broken down borehole
  - 1) Less than a week
  - 2) 1 Week
  - 3) 2 Weeks
  - 4) 4 Weeks
  - 5) 8 Weeks
  - 6) More than 8 Weeks
11. If No to 8 above how long has it been broken down?
  - 1) Less than a week
  - 2) 1 Week
  - 3) 2 Weeks
  - 4) 4 Weeks
  - 5) 8 Weeks
  - 6) More than 8 Weeks
12. Does the borehole have Water User Committee Yes/No
13. Is the committee Functioning Yes/No

14. What is the composition of the committee?

Name	Position	Sex
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----

Name	Position	Sex
-----	-----	-----
-----	-----	-----
-----	-----	-----

15. What are the roles and responsibilities of the Water User Committees?

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16. How was the committee formed?

1. Elected by Users
2. Selected by Plan Officials
3. Selected by Local Council
4. Others (Specify).....

17 Has the committee changed membership since it was instituted Yes/ No

18. If Yes Why.....

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19. According to the guidelines how often is the membership to be changed

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20. Has the committee undergone any training? Yes/ No

21. List areas of training covered

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-----  
22. Problems encountered by WUC members in their work

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-----  
23. Other Areas of investigation by the Team

24. Is the handle lubricated

25. Is handle firm

26. Check whether the bolts nuts and pump head are not loose

27. Check whether all nuts and washers are in position

28. Is water discharge satisfactory (measure discharge into jerrican)

29. Check if plat form is ok or cracked

30. Check if soak way is working  
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